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Informal Finance in Rural Niger:
Scope, Magnitudes and Organization.

by

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Introduction

Rural finance in Niger is a little explored area. This is even more true for informal financial markets. This paper attempts to redress this state of affairs by documenting key informal financial activity in the country. This documentation is derived from three separate field surveys carried out in Niger in 1985 and 1986 by a team of researchers under the direction of Ohio State University and the Institut de Recherches en Sciences Humaines of Niger. ⁽¹⁾ The first section of this paper draws upon the findings of these field surveys and presents an overview of formal and informal financial services in rural Niger. The next section explores the network of merchant finance in the countryside. This data clarifies the separate roles and magnitudes of wholesale and retail finance. This is followed by a detailed review of tontines and moneykeepers, the classic forms of indigenous financial intermediation at the village level. The final section summarizes the strengths and limitations of formal and informal finance in rural Niger and draws conclusions concerning the prospects for building down from formal structures or building up from an informal base.

An Overview of Rural Finance in Niger

Table 1 sets forth the relative importance of formal and informal borrowing activity in Niger. A random sample of 398 village households from 22 villages throughout Niger highlights the overwhelming importance of informal credit activity in the country. Twenty two percent had average annual access to formal credit over the period 1980-85 (this drops to fifteen percent if we exclude simple small sized seed loans). Roughly 84 percent of the households had an average annual access to informal borrowing over this same five year period. The percentages add up to more than 100 percent since some households had access to both formal and informal credit.

The formal credit activity is associated with an expected loan amount of only 3,565 CFA whereas informal borrowing generated an expected loan value seven and one half times higher. Total borrowing activity represented approximately nineteen percent of the agricultural income recorded in the sample households in 1985 with informal credit sources predominating.

Table 2 moves beyond the random sample results to present a more comprehensive profile of formal and informal savings and loan activity in Niger. The results are derived from separate surveys of wholesale and retail merchants, tontines and money-keepers as well as the random sample profile, and data on loans from the Caisse Nationale de Credit Agricole (CNCA) and savings deposits held in rural post office branches in Niger. The loans or savings are listed in rank order within each category in the table. Columns 1 or 2 underscore the sharp difference in scale between wholesaler loans and those at the village level. If one excludes wholesaler activity and focuses on village level loans, one can see these range in size from 64 to 144 dollar equivalent loans from informal sources and from 3 to 345 dollars from formal sources. This range of loan activity is consistent with a rural income per capita in 1985 documented at 65 dollars per person. The informal savings activity through tontines and moneykeepers range from 19 to 205 dollars per member, per tontine or per deposit. This compares to an average post office savings deposit of 51 dollars in 1985.

Several important findings are evident in this profile of financial market activity at the village level. First, there are diverse forms and channels of financial activity in rural Niger. Second, the average size of informal loans and savings are equal to or larger than formal savings and loan activity. Third, moneykeepers, a peculiarly African phenomenon, stands out in both loan and savings channels. Fourth in terms of sheer size and magnitude merchant finance predominates in this setting. The remainder of this paper investigates in more detail the magnitudes, patterns, and characteristics of the merchant network and tontine and moneykeeper organizations in rural Niger. Following this discussion the implications for institutional development of rural finance are explored.

Merchant Finance in Rural Niger

Table 3 documents the range and pattern of wholesale and retail finance in rural Niger while Tables 4 to 7 test several hypotheses concerning the borrowing and lending activity of the two class of merchants. These data on merchants come from a follow-up survey in 1986 of 38 wholesalers (Grossistes) and 58 retail merchants (detaillants) identified through our random sample survey of 398 village households carried out in 22 villages in 1985. We consider these data on 38 wholesalers and 56 retailers to be a reasonable sample of "commerçant" activity. The merchants were randomly chosen from a list of merchants identified by the villagers.

Wholesalers live in nearby regional towns while retailers live in the villages and participate actively in village life. The panel data in Table 3 highlights the profile of this merchant

finance network. Both merchant classes have high access to credit supplies (panel 1). For wholesalers this credit comes largely from banks while for retailers it comes from other merchants and suppliers, namely, wholesalers (panel 2). The form of credit to wholesalers is money (as one would expect from merchants drawing heavily on bank credit) while credit in kind (i.e. goods) dominates the supply of credit to retailers (panel 3), as one would expect in a goods -consignment wholesaler-retail network. Household items dominate the type of goods sold for both merchant groups (panel 4). Agricultural inputs represent a minor to non-existent type of good dealt with through merchant finance in Niger. Two factors explain this feature. First, modern inputs are not widely used in traditional village agriculture. Second, to the extent modern inputs are used in donor-supported IRD projects or periodic fertilizer programs, government parastatal monopolies control the distribution of these inputs.

Panels 5 through 11 in Table 3 round out this profile of merchant finance. A high percentage of the merchants (who had benefited from access to finance) in turn make loans to others (panels 5 and 6). This underscores the chain of finance or trickle down effect evident in the network of merchant finance in rural Niger. Of interest here is the link between formal and informal finance as the bank financed wholesalers pass on their increased liquidity in the form of goods consignments (i.e. credit in kind) to their network of village based retailers who in turn make loans to villagers.

Panels 8 and 9 identify another important feature of merchant finance in rural Niger, the role of indeterminant lines of credit. Wholesalers can actually arrange for long term credit (more than one year) as can be seen in panel 8, however, this is not common (or necessary) for retailers. What is of interest here, however, is the relative importance of indeterminant lines of credit, especially for the village level retailers both as borrowers and lenders (panels 8 and 9). Roughly forty percent of their credit activity falls into this category.

Indeterminant lines of credit imply an open line of credit of indeterminant length or term structure. This form of credit transaction rarely occurs with formal or institutional credit. In informal finance, however, where the lender - client relationship is more close knit, monitoring and risk management can occur at low transaction costs, and the possibilities for negotiating flexible and changing terms of loan contracts are more common. It should be pointed that neither wholesalers or retailers admitted to charging interest. This should not be necessarily interpreted as truly reflecting no interest charges. In a Muslim society traders would not easily admit to such a practice, at least not to an interviewer from the outside. Also it is possible that interest could be charged implicitly through the

pricing of goods with their clientele. We were not in a position to trace out these transactions over time to see if implicit interest did enter the downstream pricing relationships. Finally panels 10 and 11 of Table 3 highlight the greater relative participation of retail merchants in tontines and moneykeeper activity. This of course is consistent with their being village residents.

Tables 4 through 7 complete the profile of merchant finance for the 38 wholesalers and 56 retailers in our sample. Here we test the relationship between the most recently recorded average loan size (as a borrower or as a lender) and selected characteristics of the loan (such as term structure and collateral) and of the merchant. Ordinary least squares regressions were used to test these relationships. The t-ratios and their relative statistical significance are reported in each table.

The results are more revealing for retailers than for wholesalers. For the latter Table 4 only indicates there was not a statistically significant relationship between average loan size for wholesalers as borrowers and collateral, term structure or average loan size as a lender. The lack of any positive association between recorded collateral and loan size (which one would expect) probably grows out of the weak quality of the answers given by wholesalers concerning the value of their liquid assets and inventory (i.e. their collateral).

Table 5 does indicate a positive and statistically significant relationship between the wholesalers loan size as a lender, on the one hand, and the term structure of their loan obligations to their creditors on the other hand. This relationship makes sense. Longer term credit from one's creditors would likely allow one to engage in larger sized loan activity.

The most interesting and consistent findings, however, can be found for village level retailers (Tables 6 and 7). Here the level of collateral and term structure of the loan are both significantly associated with the average loan size of retail borrowers. Also the term structure of the retailers' loan (as a lender) is significantly associated with their average loan size as a lender. These findings for informal, village level, merchants (especially retailers) are consistent with the financial behavior one would expect from business oriented financial intermediaries. It is logical that collateral would play a role in determining average loan size. Similarly it is understandable that larger average sized loans would be associated with a longer term structure as a borrower or a lender. It is now instructive to investigate the financial profile of other village level intermediaries.

Tontines and Moneykeepers: The Classic Village Level Intermediaries.

Tontines are the most popular village level institution mobilizing deposits and dispensing loans in Niger. The OSU survey randomly chose 56 tontine organizers or leaders from a list prepared from the earlier village household survey respondents who identified the tontine organizers known to them in their village. The final sample generated a minimum of two tontine leaders from each of the randomly selected 22 villages in Niger. A third tontine organizer was chosen from the larger sized villages to reach the total sample of 56 tontine organizers.

Table 8 sets forth the key descriptive characteristics of the sample. Tontines in rural Niger range from small groups of three to four members to large groups of forty members. As in any informal rotating savings and credit association (ROSCA) each member contributes a fixed amount during each meeting throughout the life of the tontine (i.e. the period of time it takes for every member to benefit from the loan generated through the aggregate contributions of all other members). In our sample, tontines met once every five, seven, fourteen, twenty one, or every 30 days (panel E). The life cycle of the tontine (Panel F) can be established by multiplying the number of members by the frequency of meetings. A loan is granted during each meeting from the collected contributions of each member. Each member of course continues his contribution at each meeting even after receiving his loan. In our sample female organizers predominated. This represented a range of female occupations from housewives to female market vendors to public school teachers and female extension agents. Male organizers were either farmers or traders.

There did not appear to be any established practice to pay a premium to move up in the queue to gain an earlier rather than a later loan in the lifecycle of the tontine. On the contrary organizers emphasized that the loan rank order was collectively determined at each meeting according to the relative needs of each member. This is not surprising in a Sahelian village society where income and food sharing practices are fairly common. By the same token the agreed upon sequential order of loans was frequently changed in the face of emergency needs of another member.

This resource sharing practice in villages and flexibility in catering to member needs within these tontines should not blind us to the wide diversity of income levels and the amount of liquidity circulation in Niger village level tontines. Panel B of Table 8 establishes this wide diversity through strikingly different relative magnitudes of average member contributions and the average size of tontine loans. Average member contributions

can range from a low of 100 CFA (i.e. about 25 cents) in the lowest income tontine to a high of 25,000 CFA in the highest income totine (roughly 70 dollars). Individual tontine loans (i.e. the contribution per member times the number of members) range from 800 CFA (little more than two dollars) in the lowest income level tontine to 200,000 CFA (i.e. roughly 700 dollars) in the highest income tontine. The average loan size for all 56 tontines was 104 dollars, comparable to the average outstanding balance of CNCA formal loans (111 dollars) in 1985.

It is instructive to investigate the degree to which tontine characteristics are significantly associated with these diverse tontine income levels evident in panel B. Ordinary least squares regression estimates are set forth in Table 9 identifying tontine characteristics that explain the wide diversity in monthly contributions per member, per tontine. The contributions are inversely related to the organizer being a housewife and positively related to the organizer being a trader or public sector employee (School teacher, extension agent, etc.), being paid a fee for carrying out the responsibilities of organizer, and being located in the high income region of Maradi. These results are consistent with our expectations that higher income tontines would be significantly associated with higher income occupations of the organizer since tontine membership tends to follow segmented occupational groupings. Similarly one would expect that only higher income tontines would be able or interested in paying the organizer a fee for his or her services to manage the tontine.

To appreciate the unusual scale of total savings and loan activity for the 56 tontines one can estimate the total liquidity circulation by calculating the total contribution for the entire life cycle of each tontine (which can range from one month to as much as one year, see Panel F). These can then be aggregated into a grand total for all 56 tontines. This grand total amounts to the CFA equivalent of 72,000 dollars for an average life cycle well under one year in length. This represents an unusually promising potential base for a more formally based village cooperative to build on.

Moneykeeper activity completes this profile of village level financial services. As in the tontine survey, a list of moneykeepers was compiled from respondents in our earlier village household survey. Moneykeepers were randomly chosen from this list in the 22 villages with two moneykeepers drawn from each village and a third added to the larger sized villages to reach 56. Table 10 indicates a heavy representation of Haoussa moneykeepers in the sample throughout the country. In contrast to tontines, the male gender predominates for moneykeepers in our sample. Similar to tontines there is a wide diversity in the number and amount of deposit activity. Seventeen moneykeepers (out of 56) recorded no deposit activity in the previous season.

Of the remaining 39 moneykeepers there is a wide diversity from one to 150 depositors and from 10,000 CFA (a bit less than 30 dollars) to as much as 5,000,000 CFA in deposits (a little over 13,000 dollars) at the height of the season, namely the immediate post harvest period.

Moneykeepers are among the most respected members of the village as one would expect with so many people entrusting their money to their care. Frequently their depository services are also associated with pawnbroking services and the storage of other goods for limited periods of time. Traders predominate among the occupation of moneykeepers. As traders they are frequently entrusted with money to use to buy goods (in nearby Nigeria for example) for their customers. Hence the holding of deposits can also be associated with a down payment for future goods acquisition. Moneykeepers do not pay interest on their deposits, nor do they appear to charge for their security services. Possibilities exist for implicit interest to be charged in associated commercial transactions, but we were unable to trace out these transactions over time.

Table 11, through an ordinary least squares regression, explores further the important characteristics explaining the size of the deposit public served by a moneykeeper at the height of the season. Literacy is not associated with the number of depositors served, indeed, a significantly inverse relationship is discovered here. The same holds for the simultaneous supply of pawnbroker services. These features are significantly associated with moneykeepers with a smaller number of depositors. On the other hand, years of service as a moneykeeper is positively associated in a significant fashion with serving a larger base of depositors, as one might expect. Also traders are significantly associated with a larger deposit public, compared to other occupational groups. This is consistent with our expectations along with the finding that Zinder stands out as the region with the larger deposit base. The villagers in this region, close to Nigerian border, frequently use the moneykeeper-traders as a commercial conduct for cross border trade.

Moneykeepers are also important sources of informal loans in their villages. Panel E of Table 10 highlights this role. Here the short term nature of the loan activity stands out among the moneykeepers with loans who answered the question on term structure. As indicated earlier in Table 2 the average loan size for the 44 moneykeepers with loan activity was 54,784 CFA (roughly 144 dollars). This was larger than the tontine loan size average, the CNCA average outstanding balance or the average retail merchant loan to villagers. It is also interesting to note that the term structure of deposits held by moneykeepers is considerably longer (Panel F, Table 11) than the term structure for their informal loans (in panel E).

Finally it is relevant to point out the importance of the aggregate level of deposits held by the 39 moneykeepers with active deposit accounts in our sample. This came to roughly 30 million CFA (or 79,000 dollars) during the height of the season and approximately 13 million CFA (or \$34,000 dollars) during the dry season. This seasonal variation in moneykeeper deposits reflects the changing number of depositors in that 617 active depositors were recorded during the height of the season and only 363 during the low level dry season. Whether during the harvest or dry season this flow of deposit activity through the 39 active moneykeepers in our sample represents significant liquidity circulation. In conjunction with our earlier findings on tontines this informal village level deposit base illustrates an additional potential source of liquidity for more formal financial intermediaries.

Summary and Conclusions: Implications for Development Finance

We have addressed the scope, magnitudes and organization of key informal financial markets in Niger in this paper. In the rudimentary economies of Sahelian Africa these markets play a more dominant role, particularly at the village level, than in many low-income countries. Yet despite the low incomes associated with Niger, it was clear that there was a substantial flow of liquidity through these markets. Also, despite the rudimentary nature of these markets an embryonic form of financial intermediation was occurring through tontines, moneykeepers and merchants. In short, the scope was wide, the magnitudes substantial and the organization rational and consistent with business oriented financial parameters of performance. Finally, one must not overlook the important fact that these informal vehicles supplying village level financial services have proven to be self-sustaining in the risky environment of the Sahel.

What are the lessons for formal finance in the documented record of informal finance in rural Niger? First it is important to recognize the nature of the financial services being demanded and supplied at the local level. There is an ample demand for short term credit, deposit and savings services and consumption loans in this setting. Second, open lines of credit of indeterminate length and frequently changing terms and conditions mark the organizational style of financial transactions of this level. Third, multiple rather than single service finance dominates with the act of saving and the granting of loans intimately linked in tontine and moneykeepers activities. Pawnbroking, inventory and marketing services are also tied into the activities of moneykeepers and retail lenders. Finally, both explicit and implicit elements of enforcement exist at the local level in the form of collateral substitutes (e.g. deposits for a moneykeeper, etc.) frequent contact, social cohesion and sanctions. In short, interlinked markets, multiple services and a theory of contracts

interlinked markets, multiple services and a theory of contracts shape the transactions taking place in the financial markets of rural Niger.

Formal finance, however, has a difficult time emulating these features of informal finance and thereby maintaining a viable presence in local markets. They generally fail to appreciate the strength of the indigenous systems or recognize the nature of the demand for financial services at the local level. No interlinked market or multiple services characterize the activity of the public sector agricultural development bank (i.e. the CNCA). The CNCA in Niger ignores deposit services entirely and emphasizes medium to long term loans. There is a strong bias against any form of decentralization or local autonomy in loan demand. Top-down loan targeting predominates. Only infrequent contact is established with the final borrower with several layers of intervening bureaucracy. There is no interest in mobilizing local resources (with or without outside funds). Instead outside funds displace potential local sources of funding for the institutions, thereby creating an alien, institution with no local identification. Not surprisingly, there is little social cohesion felt or local social sanctions exercised on behalf of loan recovery and financial solvency for the public sector institutions by the local populace.

It is difficult for formal financial institutions to emulate the virtues of informal finance. At the same time it is difficult for informal finance to emulate the scale and alleged spatial economies of formal finance. Nevertheless a bottom-up approach may be the more promising path to follow in the future. Informal markets, despite their strengths and flexibility, are still fragmented into relatively homogeneous tontine groupings or limited by small moneykeeper deposit bases. The advantages of broader scale and scope economies are unrealized along with the advantages of pooling a larger base of short term deposits into a slightly longer term structure of loans. These pooling and transformation properties are difficult to create through small scale, informal financial mechanisms. Finally, it is difficult in informal finance to diversify risk through spatial economies (i.e. an interregional network) that smooths out inter-annual and intra-annual seasonal cash flows in a broad national market.

The discussion above leads us to a set of questions that are useful statements with which to end this paper.

1. What are the comparative costs of promoting formal institutions to mimic the strengths of informal finance versus the promotion of informal financial groups to adopt features of formal finance?
2. Is it politically and administratively feasible to expect that public sector development banks in Africa could ever

decentralize operations into relatively autonomous local branches with diversified untargeted loan portfolios, built largely upon local deposit mobilization?

3. What economic initiatives are necessary to induce village level moneykeepers, retail merchants and tontine leaders to consider joint action to build up from their current informal vehicles into a more formalized cooperative venture?
4. How can one develop a flexible formalization of informal groups in an Integrated Rural Development enclave when all the signals and organizational style of the IRD project have been built upon a heavily targeted, top-down approach?
5. How is it possible for a formal financial institution to survive in a legal setting where land titles and other property are too poorly developed to use as collateral in financial contracts? (Informal finance can remain viable through collateral substitutes, formal finance cannot).

The key question here is the degree to which some village based set of credit and savings cooperatives, building on retail merchants, moneykeepers and tontine leadership in Niger, could "build up" more successfully than the formal institutions to date have been able to "build down". These issues should be the subject of future research on rural financial markets in Africa.

Table 1

Total Formal and Informal Borrowing Recorded at the Village
Household Level in Niger in the Summer of 1985
(From Random Sample of 398 Households)

Source of Loans	Access to Loans (%)	Ave. Amount (in CFA) ⁽¹⁾	Expected Borrowing (col 1 x col 2) ⁽²⁾		% of Agric. Income of H.H.
			CFA	(% of Total)	
	(1)	(2)	(3)	(4)	(5)
1. Formal	22.4	15,916	3,565	12	2.2
2. Informal	83.9	31,757	26,651	88	16.7
Total			30,213	100	18.9

Source: Results of Random Sample of 398 Village Households reported in Chapter III (C) of Rural Finance in Niger: A Critical Appraisal and Recommendations for Change, Final Report of The Ohio State University to the USAID Mission, Niamey, Niger, February 1987.

Notes: (1) Average exchange rate in 1985: one dollar equaled 380 CFA.

(2) The "expected borrowing" refers to the size of a formal or informal loan that a random household would expect to have access to in our random sample. This is the probability of gaining access to a formal or informal loan (column 1) times the average loan size documented in the survey (column 2).

Table 2

Selected Indicators Summarizing Savings and Loan Activity in
Rural Niger Derived from Rural Finance Project Surveys, 1985-86

	CFA	U.S. \$ Equiv. (380 CFA = 1 US\$)	Total Sample	Subsample With Savings or Loans
	(1)	(2)	(3)	(4)
I. <u>Formal Loans</u>				
1. Average size CNCA equipment loan in village household survey	131,049	\$ 345	n.a.	238
2. Ave. size of balance of outstanding individual loans in CNCA, 1984-85	42,300	111	n.a.	n.a.
3. Ave. size of CNCA seed loan in 1985 village household survey	995	3	n.a.	215
II. <u>Semi-Formal Loans</u>				
1. Ave. loan size to wholesale merchants	19,246,642	50,649	38	28
III. <u>Informal Loans</u>				
1. Ave. wholesale merchant loan size to others	2,327,500	6,125	38	16
2. Ave. loan size to village retail merchants	399,564	1,051	58	31
3. Ave. moneykeeper loan size to villagers	54,784	144	56	44
4. Ave. size of rural village tontine loan	39,342	103	56	56
5. Ave. size of informal loan in 1985 village household survey (random sample subset)	31,757	84	898	398
6. Ave. size retail merchant money loan to villagers	24,286	64	58	29

(Continued)

Table 2 (continued)

Selected Indicators Summarizing Savings and Loan Activity in
Rural Niger Derived from Rural Finance Project Surveys, 1985-86

	CFA	U.S. Equiv. (380 CFA = 1 US\$	Total Sample	Subsample With Savings or Loans
	(1)	(2)	(3)	(4)
IV. <u>Formal Savings</u>				
1. Ave. size of deposit in Post Office Savings Inst. (1984) (Countrywide)	19,200	\$ 51	n.a.	n.a.
V. <u>Informal Savings</u>				
1. Ave. savings contribu- tion per month per tontine	77,782	205	56	56
2. Ave. level of deposits held with village money- keeper (at immediate post harvest season)	48,744	128	56	39
3. Ave. level of deposits held with village money- keeper (during dry season)	35,507	93	56	39
4. Ave. savings contribu- tion per month, per member per tontine	7,071	19	56	56

Source: OSU Rural Finance Project Surveys in Niger, 1985-6. Reported in Chapters III and IV of Rural Finance in Niger, op. cit.

Table 3

Comparative Profile of Business Activity for 38 Wholesale and
58 Retail Merchants Operating in Selected Areas of Rural Niger
from Selected Data in Rural Finance Project Survey, May 1986.

	Wholesale Merchants	Retail Merchants
	(1)	(2)
1. Percent of Total No. with access to loans (%)	86.8%	60.3%
2. Source of Credit (%)		
a) friends and relatives	9.1	14.3
b) other merchants	24.2	57.1
c) banks	48.5	5.7
d) suppliers	12.1	20.0
e) others	6.1	2.9
3. Form of Credit (%)		
a) in money	51.5	22.9
b) in goods	27.3	65.7
c) both	21.2	11.4
4. Type of Products Sold (%)		
a) cereals	13.2	3.6
b) household items	71.1	60.7
c) livestock products	10.5	3.6
d) combination above	5.2	32.1
5. Percent of total making loans to others	94.7	87.0
a) in money	(23.7)	(16.0)
b) in goods	(52.6)	(31.0)
c) both	(18.4)	(40.0)
6. Percent With Access to Loans Making Loans to Others (%)	64.0	88.6

(continued)

Table 3 (continued)

Comparative Profile of Business Activity for 38 Wholesale and
58 Retail Merchants Serving Selected Areas of Rural Niger
from Selected Data in Rural Finance Project Survey, May 1986.

	Wholesale Merchants	Retail Merchants
	(1)	(2)
7. Average Level of Liquid Assets and Value of Stock of merchandise (CFA)	3,863,017	132,441
8. Term Structure as Borrower (% Total)		
a) 0-30 days	18.2	34.3
b) 31 - 365 days	39.4	25.7
c) more than one year	21.2	0.0
d) indeterminate line of credit	21.2	40.0
9. Term Structure as Lender (% Total)		
a) 0-30 days	24.1	46.9
b) 31 days to a year	13.8	9.4
c) indeterminate line of credit	62.1	43.7
10. Percent in Tontines (%)	5.3	22.4
11. Percent in Moneykeeper Role (%)	15.8	37.9

Source: OSU Rural Finance Project Surveys in Niger, 1985-6. Reported in
Chapter III-D in Rural Finance in Niger, op. cit.

Table 4

Relevant Borrower Characteristics Tested by Ordinary least Squares
Estimates from Sample of 38 Wholesalers in Niger Village Surveys, 1986

Dependent Variable: Average Loan Size as Borrower (CFA)

<u>Variable</u>	<u>Estimated Coefficient</u>	<u>t-ratio</u>
Wholesaler's collateral	-12.4	(-1.05)
Term-structure (Borrower)	-13140.5	(-0.55)
Average loan size as lender	2.9	(1.70)
Intercept	41282526.9	

RSQ = 0.50

* Significant at 5 percent level. The above results are derived from the following equation ($Y = B'X + u$); Where Y = the independent variable, B' = the vector of parameters, X = the vector of explanatory variables with the first term equal to one (the intercept) and u is the error term.

Table 5

Relevant Lender Characteristics Tested by Ordinary Least Squares
Estimates from Sample of 38 Wholesalers in Niger Village Surveys, 1986

Dependent Variable: Average Loan Size as Lender (CFA)

<u>Variable</u>	<u>Estimated Coefficient</u>	<u>t-ratio</u>
Term-structure (Lender)	24013.0	(0.49)
Term-structure (Borrower)	9300.3	(2.27)*
Intercept	-3810508.1	

RSQ = 0.47

* Significant at 5 percent level. For equation specification see note table 4.

Source: OSU Rural Finance Project Surveys in Niger, 1985-86. Reported in Chapter III-D in Rural Finance in Niger, op. cit.

Table 6

Relevant Borrower Characteristics Tested by Ordinary Least Squares
Estimates from Sample of 58 Retailers in Niger Village Surveys, 1986

Dependent Variable: Average Loan Size as Borrower (CFA)

<u>Variable</u>	<u>Estimated Coefficient</u>	<u>t-ratio</u>
Retailer's collateral	0.8	(2.02)*
Term-structure (Borrower)	4044.0	(2.95)*
Average loan size as lender	-1.7	(-0.41)
Relatives	-407333.6	(-0.80)
Traders	-37248.0	(-0.04)
Suppliers	52046.7	(0.18)
Banks	-58232.7	(-0.14)
Intercept	34223.3	
		RSQ = 0.27

* Significant at 5 percent level. For equation specification see note table 4.

Table 7

Relevant Lender Characteristics Tested by Ordinary Least Squares
Estimates from Sample of 58 Retailers in Niger Village Surveys, 1986

Dependent Variable: Average Loan Size as Lender (CFA)

<u>Variable</u>	<u>Estimated Coefficient</u>	<u>t-ratio</u>
Term-structure (Lender)	508.9	(2.41)*
Term-structure (Borrower)	-13.3	(-0.28)
Purchasing crops	1932.7	(0.20)
Moneykeeper activities	9496.6	(1.05)
Tontine activities	-561.9	(-0.05)
Intercept	-8655.1	
		RSQ = 0.14

* Significant at 5 percent level. For equation specification see note table 4.

Source: OSU Rural Finance Project Surveys in Niger, 1985-86. Reported in Chapter III-D in Rural Finance in Niger, op. cit.

Table 8

Selected Characteristics of the Sample of
56 Tontines in the Niger Village Level Surveys, 1986

A. Ethnic Groups

	<u>No.</u>	<u>%</u>		<u>No.</u>	<u>%</u>
1. Hausa	30	53.5	4. Toureg	3	5.4
2. Zarma	14	25.0	5. Beriberi	1	1.8
3. Peulh	8	14.3	TOTAL	56	100.0

B. Size of Ave. Contribution and Size of Single Loan (In Discrete Groupings)

<u>Per Member Contributions</u>	<u>No.</u>	<u>Size of Single Loan Per Tontine</u>	<u>No.</u>
1. 100 to 300 CFA	11	1. 800 to 3,400 CFA	8
2. 500 CFA	12	2. 5,000 to 9,500 CFA	10
3. 1,000 to 2,500 CFA	13	3. 10,000 to 17,000 CFA	10
4. 3,000 to 5,000 CFA	5	4. 20,000 to 55,000 CFA	11
5. 10,000 CFA	11	5. 60,000 to 90,000 CFA	10
6. 15,000 to 25,000	4	6. 100,000 to 200,000 CFA	7
TOTAL	56	TOTAL	56

C. Gender of Membership

	<u>No.</u>	<u>%</u>		<u>No.</u>	<u>%</u>
1. All women	32	57.1	3. Majority men	5	8.9
2. Majority women	18	32.1	4. All men	1	1.8
		TOTAL		56	100.0

D. No. Members per Tontine

	<u>No.</u>	<u>%</u>
1. 3 to 10 members	22	39.3
2. 11 to 19 members	19	33.9
3. 20 to 40 members	15	26.8
TOTAL	56	100.0

E. Frequency of Contributions

	<u>No.</u>	<u>%</u>		<u>No.</u>	<u>%</u>
1. Every 5 days	3	5.5	4. Every 14 days	1	1.8
2. Every 7 days	32	57.1	5. Every 30 days	19	33.9
3. Every 10 days	1	1.8	TOTAL	56	100.0

F. Complete Life Cycle of Tontine

	<u>No.</u>	<u>%</u>		<u>No.</u>	<u>%</u>
1. 33 to 60 days	5	8.9	4. 241 to 300 days	8	14.3
2. 61 to 120 days	17	30.4	5. 300 to 360 days	4	7.1
3. 121 to 240 days	22	39.3	TOTAL	56	100.0

Source: OSU Rural Finance Project Tontine Survey, 1986, Reported in Chapter IV-C in Rural Finance in Niger, op. cit.

Table 9

Relevant Tontine Characteristics Tested by Ordinary Least Squares
Estimates from Sample of 56 Tontines in Niger Village Survey, 1985

Dependent Variable: Monthly contribution per member per tontine (CFA)

<u>Variable</u>	<u>Estimated Coefficient</u> ¹	<u>t-ratio</u>
1. Lifecycle	- 2.13	(- .60)
2. Payment for services	2.16	(3.51)*
3. <u>Occupation</u>		
Housewives	-2947.4	(-5.07)**
Traders	4048.2	(2.89)*
Public Sector Employees	2349.9	(3.49)**
4. <u>Region</u>		
Niamey	- 755.8	(-1.17)
Doddo	- 757.0	(- .79)
Maradi	3576.7	(4.60)**
Zinder	-1525.6	(-1.87)
5. Intercept	6884.9	

RSQ = 0.67

* Significant at 5 percent level; ** significant at 1% level. For equation specification see note table 4.

Source: OSU Rural Finance Project Tontine Survey, 1986. Reported in Chapter IV-C in Rural Finance in Niger, op. cit.

Note (1) Coefficients are Ridge Regression Coefficients for $k = 0.9$.

Table 10

Selected Characteristics of Moneykeepers from the Sample
of 56 Moneykeepers in the Rural Finance Project Survey, 1986

A. Ethnic Groups

	<u>No.</u>	<u>%</u>		<u>No.</u>	<u>%</u>
1. Haoussa	32	57.1	3. Peulhg	6	10.7
2. Zarma	13	23.2	4. Touareg	5	1.0
			TOTAL	56	100.0

B. No. Depositors and Amount of Deposits at Harvest Season (Discrete Groups)

<u>No. Depositors</u>	<u>No.</u>	<u>Amount of Deposits (000 CFA)</u>	<u>No.</u>
1. 0	17	1. 0	17
2. 1 - 2	10	2. 10 to 45 CFA	6
3. 3 - 9	9	3. 50 to 90 CFA	6
4. 10 - 17	10	4. 100 to 280 CFA	10
5. 20 - 30	8	5. 320 to 960 CFA	6
6. 100 - 150	2	6. 1,000 to 5,000 CFA	11
TOTAL	56	TOTAL	56

C. Occupations

	<u>No.</u>	<u>%</u>		<u>No.</u>	<u>%</u>
1. Traders	13	23.2	3. Housewives	4	7.1
2. Farmers	33	58.9	4. Others	6	10.8
			TOTAL	56	100.0

D. Gender and Literacy

	<u>No</u>	<u>%</u>		<u>No.</u>	<u>%</u>
1. Men	50	89.3	1. Literate	27	48.2
2. Women	6	10.7	2. Illiterate	29	51.8
			TOTAL	56	100.0

E. Term-Structure as Informal Lenders

	<u>No.</u>	<u>%</u>		<u>No.</u>	<u>%</u>
1. 1-30 Days	15	26.8	4. No Answer	22	39.3
2. 31-180 Days	5	8.9	5. No Loans	11	19.6
3. 180 Days or More	3	5.4	TOTAL	56	100.0

F. Term Structure as Deposit-Takers

	<u>No.</u>	<u>%</u>		<u>No.</u>	<u>%</u>
1. 1-30 Days	7	12.5	4. No Deposits	4	7.1
2. 31-180 Days	22	39.3	5. No Answer	14	25.0
3. 180 Days or More	9	16.1	TOTAL	56	100.0

Source: OSU Rural Finance Project Survey Results, 1986, Reported in Chapter III-C in Rural Finance in Niger, op. cit.

Table 11

Relevant Characteristics of Moneykeeper Activity Tested by
Ordinary Least Squares Estimates from Niger Village Level Surveys, 1986

Dependent Variable: Maximum Number of Depositors at the Height of the
Season (harvest)

<u>Independent Variables</u>	<u>Coefficient</u>	<u>t-ratio</u>
1. Literacy	- 12.80	- 1.93*
2. Years of service as Moneykeeper	0.81	1.84*
3. Pawnbroker services	- 8.15	- 1.38 ⁺
4. <u>Region</u>		
Niamey	- 7.59	- 0.78
Dosso	- 1.17	- 0.11
Tahoua	2.75	0.25
Zinder	28.09	2.65*
5. <u>Occupation</u>		
Traders	22.64	2.01*
Farmers	- 0.76	- 0.07
Housewives	2.69	0.14
6. Constant	17.87	1.09

R^2 = 50.0 percent

* significant at 5% level. For equation specification see note table

4.

+ significant at 20% level.

Source: OSU Rural Finance Project Survey, 1986.

Notes

- (1) The documentation and results of these surveys are reported in Rural Finance in Niger: A Critical Appraisal and Recommendations for Change, a final report submitted by the Ohio State University to the USAID Mission, Niamey, Niger, February 1987.

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